

Alien Definitions

An Introduction to Aquatic Nuisance Species Vocabulary



Activity

Students play an interactive game to learn the meaning of common terms used to describe the origin of organisms and the environment they live in.

Grade level: 6-8 (adaptable to younger grade levels)

Subjects: Language Arts, Science

Setting: Classroom

Duration: 40-60 minutes

Key Terms: alien, aquatic, aquatic nuisance species (ANS), endemic, exotic, indigenous, introduced, invasive, native, non-native, organism.

Objectives

- Students will become familiar with the different vocabulary words used to describe native and introduced species in an aquatic environment.
- Students will compare and contrast the difference between native, non-native, nuisance and invasive species
- Students will begin to identify familiar aquatic organisms as native or introduced species.

Materials

- Fly Swatters (30 supplied)
- Alien Definition Cards (6 sets supplied)
- Alien Questions (6 sets supplied)

Background

The goal of this activity is to clarify and define common terms that will be used throughout this aquatic nuisance species education trunk.

Native species (also known as indigenous species) are organisms that live in their place of origin. Native species occur in a given area because they evolve in that environment over time or migrate into the environment naturally (i.e., without human influence). Examples of native species occurring in the lower Columbia River Basin include: caddis fly, western pond turtle, western pearlshell mussel, beaver, Columbian white-tailed deer and river otter.

Endemic species are native plant and animal species which are only found in a particular area or region. They are not naturally found anywhere else in the world. Examples of organisms endemic to the Olympic Peninsula (WA State) include: Olympic mudminnow, Olympic torrent salamander, Olympic marmot, Piper's bellflower and Flett's violet.

Non-native species (also known as alien, exotic or introduced species) are organisms that do not naturally occur in a specific location. They are usually introduced to a new environment either intentionally or accidentally through human actions. Examples of non-native species occurring in the lower Columbia River Basin include: American shad, largemouth bass, opossum, European starling and domestic cows.

Invasive species (also referred to as nuisance species) are non-native species whose introduction into an ecosystem causes or is likely to cause environmental, economic or human harm. Examples of organisms considered invasive in the lower Columbia River Basin include: reed canarygrass, Himalayan blackberry, Japanese knotweed, nutria and red-eared slider.

Aquatic nuisance species (often referred to by the acronym ANS) are non-native aquatic species that pose significant ecological and economic threats to aquatic ecosystems. They include fish, aquatic plants, algae, invertebrates, mussels, viruses and other aquatic pathogens. Examples of ANS found in the lower Columbia River Basin include: New Zealand mudsnail, American bullfrog, Chinese mitten crab, Hydrilla and purple loosestrife.

And remember, just because an organism is non-native doesn't mean it's inherently bad. Many of the species we think of as a natural part of our landscape are non-native. In fact, many non-native species are very beneficial and necessary to our livelihood –most major food crops and livestock in the United States are non-native species (see the activity “Am I Eating an Alien?!”). Terms such as alien or exotic do not reflect the value of the organism; they merely describe the origin of the organism.

Preparation

- Before beginning the activity, introduce the vocabulary words to the class. Ask the students what they think they mean. Have the students come up with definitions orally.
- Revise and refine the student definitions into accurate definitions (see “Background” above) and record them on the board.
- Use a diagram to show the relationship between native, non-native, nuisance and invasive species. Emphasize the similarities and differences between the terms. Show that invasive species are a specific type of non-native species that are harmful to natural ecosystems, but that not all non-native species are bad or harmful.

Directions

- Split students into groups of 4-5 and give each student a fly swatter.
- Give each group one set of Alien Definition cards and one set of Alien Question cards.
- Place Alien Question cards in a container face down.
- Each group lays their set of Alien Definition cards in the middle of the group.
- Students take turns choosing an Alien Question from the container and reading it to the group.
- All students (except the question reader) smack an answer to the question with the fly swatter. The first student to smack the correct answer gets a point.
- The student with the most points at the end of the game wins.

Evaluation

Following the game, the teacher may orally quiz students using Alien Question cards to assess student understanding of these definitions.

Extensions

Have students write their own Alien Question cards to play with in groups.

Source

This activity is an adaption of Weedy Definitions from “Weed Wackers!” K-6 Educators Guide to Invasive Plants of Alaska.

Washington State Science & Environmental Science Standards:

6-8 LS2A – An ecosystem consists of populations living within a specific area and the nonliving factors they interact with. One geographical area may contain many ecosystems.

6-8 LS2D – Ecosystems are continuously changing. Causes of these changes include nonliving factors such as the amount of light, range of temperatures, and availability of water, as well as living factors such as the disappearance of different species through disease, predation, habitat destruction and overuse of resources of the introduction of new species.

6-8 LS3E – Adaptations are physical or behavioral changes that are inherited and enhance the ability of an organism to survive and reproduce in a particular environment.

ESE Standard 2; The Natural and Built Environment – Students engage in inquiry and systems thinking and use information gained through learning experiences in, about, and for the environment to understand the structure, components, and processes of natural and human-built environments.